

USAWC STRATEGY RESEARCH PROJECT

ARMY AND AIR FORCE TRANSFORMATION – ARE THEY SYNCHRONIZED?

by

Colonel Richard A. Forster
United States Air Force

Colonel Stephen A. Weiler
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 30 MAR 2007		2. REPORT TYPE Strategy Research Project		3. DATES COVERED 00-00-2006 to 00-00-2007	
4. TITLE AND SUBTITLE Army and Air Force Transformation - Are They Synchronized?				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Richard Forster				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College, Carlisle Barracks, Carlisle, PA, 17013-5050				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT See attached.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 24	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ABSTRACT

AUTHOR: Colonel Richard A. Forster

TITLE: Army and Air Force Transformation – Are They Synchronized?

FORMAT: Strategy Research Project

DATE: 30 March 2007 WORD COUNT: 6564 PAGES: 24

KEY TERMS: Joint Operating Environment, Joint Interoperability, Quadrennial Defense Review

CLASSIFICATION: Unclassified

The future global security environment will be one of great uncertainty and complexity. United States military forces will be called upon to conduct operations in any number of environments. The ability to operate and succeed in this environment is dependent upon the Services' abilities to work effectively as members of joint and coalition teams. The Army and Air Force are working toward that vision of joint forces that provide unrivaled capabilities to the nation's leaders. It is critical that the two Services ensure their transformation processes are linked. Ensuring unity of effort throughout the transformation processes ensures that the Services will be far more effective and have greater combined capabilities for the Combatant Commanders. While both Services are moving toward greater effectiveness in executing assigned roles and missions, there may be disconnects in the two processes that could have strategic impacts. Finally, it is critical that the Services move toward fully joint cultures that enable unity of effort and thus increase the effectiveness of the American military as a whole.

ARMY AND AIR FORCE TRANSFORMATION – ARE THEY SYNCHRONIZED?

It will take unity of effort to win the long war in which our Nation is engaged. The benefits from such cooperation will be reaped by future joint warfighters, Presidents and, most of all, by the American people we serve.

—Preface to the 2006 Quadrennial Defense Review

Military transformation is a concept that is as old as warfare itself. As new weapons were developed and lessons learned from battles, militaries were transforming to improve fighting skills and lethality. Military transformation has generally been associated with technological innovations leading to new and different ways of waging war. The term transformation can also include changes in how military services are organized, trained and equipped. In the context of this study, the term transformation will include both technological and organizational factors. Many factors affect US military transformation including technological advances, political pressures, changes in the global security environment, and the evolution of joint operations and warfare. To what degree the military services transform has significant strategic implications. In a perfect world, the Services transformation processes would result in highly interoperable, truly joint capabilities that effectively support the National Security Strategy of the United States. However, the reality of budget constraints, inter-service parochialism, and competing priorities tend to constrain the transformation process leading to less than perfect results.

The Global War on Terrorism (GWOT) caused significant re-evaluation of US military operations and of the nature of warfare in the 21st Century. The U.S. finds itself with a military force that is organized and equipped on the “Cold War model” but engaged in a completely different type of warfare. The Department of Defense (DoD) and the military services are undergoing a multi-year transformation process to meet the challenges of this new global security environment. A key component to successfully operating in this new environment is the ability to operate in a cohesive, joint fashion that leverages the full capabilities of all Services and governmental agencies. The Air Force and Army have begun bearing a significant portion of the burden in prosecuting the GWOT while both are engaged in significant transformation processes. Dealing with the conflicts of the 21st Century will require the Army and Air Force to be joint, interdependent, and interoperable. For DoD success, it is critical that the two Services’ transformation efforts are cohesive and synchronized.

This paper examines the transformation processes of the US Army (USA) and Air Force (USAF), how they interrelate, and compares the synchronization of the two efforts and areas of disconnect that may lead to friction and risk in future joint operations. This paper first explores

the current and future global security environments that give context to the importance of transformation efforts by the USA and USAF. Next, internal factors affecting transformation, including guidance and direction from Quadrennial Defense Reviews and DoD, are discussed. Key components of the USA and USAF transformation efforts are then discussed. Finally, a comparison and analysis of the synchronization of the two Services' transformation efforts is examined.

External Factors Affecting Transformation - Current and Future Global Security Environment

The current political and military environment that the United States faces was unimaginable at the conclusion of the Cold War. The fall of the Soviet Union heralded what appeared to be a new era of peaceful international relations.¹ The reality, however, was a period of small scale conflicts in regions around the world. With intensity levels ranging from the full-scale conventional conflict of Operation DESERT STORM to the low-level intervention in Haiti, US military operations occurred with a greater frequency than during the Cold War.

The global security environment changed dramatically on September 11, 2001 when terrorist actors from the Al Qaeda organization attacked the United States homeland. Secretary of Defense Donald Rumsfeld described the beginning of this new era by saying, "They died not from traditional armies waging traditional campaigns, but from the brutal, faceless weapons of terror. They died as the victims of war - a war that many had feared but whose sheer horror took America by surprise."² The US had suffered many terrorist attacks during the 20th Century, but the brutality and impact of the September 11th attacks were unprecedented.

The 2001 Quadrennial Defense Review (QDR), published shortly after the September 11th attacks, described the global security environment as uncertain, fluid, and more unpredictable.³ No longer was the world divided between "Soviet bloc" nations and "western nations." The 2001 QDR listed the following key geopolitical trends as having the most significant impact on the global security environment: diminishing protection afforded by geographic distance, regional security developments, increasing challenges and threats emanating from the territories of weak and failing states, diffusion of power and military capabilities to non-state actors, developing and sustaining regional security arrangements, and increasing diversity in the sources and unpredictability of the locations of conflict.⁴ This list demonstrated the highly complex nature of the emerging security environment.

What the Cold War had provided in terms of predictability, the new "Global War on Terrorism" provided in unpredictability and complexity. The major threat to the US and to global security now came from non-state actors and unconventional means instead of nation states

and conventional campaigns. The following quote from the 2001 QDR described the uncertainty and difficulty accurately describing the emerging security environment:

An assessment of the global security environment involves a great deal of uncertainty about the potential sources of military threats, the conduct of war in the future, and the form that threats and attacks against the Nation will take. The United States cannot predict with a high degree of confidence the identity of the countries or the actors that may threaten its interests and security.⁵

The changing security environment was not the only factor adding to the uncertainty within the US government. Following the first Gulf War in 1991, the US had been engaged in a continuous series of low intensity conflicts including the enforcement of the No-Fly Zones in Iraq and peacekeeping operations in places such as Bosnia, Kosovo, Panama, Haiti, and Somalia. The 2001 QDR described how the US military, experiencing an overall reduction in the total number of personnel, experienced a significant increase in operational tempo.⁶ These increased demands, coupled with the resulting reliance on Reserve and Guard components, adversely impacted the military's ability to recruit and retain quality people.⁷

The pressure to maintain near-term readiness within the DoD had the consequences of limiting the Services ability to recapitalize aging equipment, thus forcing a cut in procurement accounts.⁸ The result was that future forces had equipment that was outdated and in need of replacement or upgrading, and no valid procurement procedures to buy replacement gear in a timely fashion or in the numbers required. To summarize the security environment at the end of 2001 would be to say that the US was facing an extremely complex and uncertain world with worn out forces and outdated equipment.

Current Operating Environment

In the time period between the 2001 QDR and the 2006 QDR, the US and a small coalition of partner nations conducted three major campaigns in the GWOT – Operation ENDURING FREEDOM (OEF) in Afghanistan, and Operation IRAQI FREEDOM I and II (OIF) in Iraq. These operations were conducted to attack and destroy the Al Qaeda organization and associated terrorist networks and to liberate Afghani and Iraqi people from “despotism, terrorism and dictatorship.”⁹ Despite major successes and great progress in defeating global terrorist networks, the security environment remained uncertain and increasingly complex.

President George W. Bush, in his foreword to the 2006 National Security Strategy (NSS), described his vision of how the US would engage the highly complex and uncertain world. “We fight our enemies abroad instead of waiting for them to arrive in our country. We seek to shape the world, not merely be shaped by it; to influence events for the better instead of being at their

mercy.”¹⁰ This comment represented a shift in US policy from reactive to preventative, focusing on addressing the enemies of the United States on foreign shores instead of waiting for attacks to happen on US or friendly nation soil. The 2006 NSS outlined the US policy to seek and support democratic nations and movements with the ultimate goal of facilitating a world of democratic well-governed states, thus ensuring enduring security for the United States.¹¹

An unintended consequence of America’s new security policies was a decline in support for the US by the world community, including its allies. When the US initiated combat operations in Iraq during OIF I, it did so with a much smaller coalition than during Operation DESERT STORM and without the support of such long time allies as Germany and France. Although the US asserted the legitimacy of OIF based on United Nations Security Council Resolutions 678, 687 and 1441, the coalition was forced to execute combat operations without a definitive United Nations mandate because France, Russia, and China did not believe these resolutions were ultimatums allowing use of force in Iraq.¹² The campaign was successful in ousting the dictator Saddam Hussein and his regime, but the resulting sectarian violence and civil war eroded international support for the war and ultimately for the US. An international poll in 2005 found that the US image was so damaged by the Iraqi war that China, ruled by a communist dictatorship, was viewed more favorably than the US in many countries.¹³

United States and coalition military forces have been heavily engaged in Iraq and Afghanistan since the start of OEF in 2001. The scale and magnitude of simultaneous combat operations in two foreign nations, coupled with the high tempo and continuous operation homeland defense mission “Operation NOBLE EAGLE,” resulted in an extremely high operations tempo for the US military. In addition to fighting the GWOT, American forces have conducted a host of other missions ranging from humanitarian relief following the Indian Ocean Tsunami in 2004 to the Hurricane Katrina relief in the US.¹⁴

This high operations tempo situation was further compounded by the high operations tempo described in the previous section, meaning that US forces conducted these operations with tired equipment and worn out forces. To summarize the current operating environment would be to say that the US is still faced with an uncertain and extremely complex environment while executing worldwide operations at an extraordinarily high operations tempo, all while using virtually the same equipment that was during the 2001 QDR.

Future Operating Environment

Despite successes in the GWOT, the future global security environment will continue to be highly complex. Current trends, combined with a large number of potential areas of conflict

around the world, point toward continued global engagement with the probability of armed conflict involving the US.¹⁵ Although the outcome of Operations ENDURING FREEDOM and IRAQI FREEDOM are not yet known, it can be assumed that the US will continue the GWOT in some fashion for the foreseeable future. United States Joint Forces Command's "The Joint Operational Environment" (JOE) and the NSS describe the complex and uncertain threats of the 21st Century as posing four challenges to the US defense community: (1) traditional challenges posed by states employing recognizable military forces in long-established forms of competition and conflict; (2) irregular challenges from those state and non-state actors adopting and employing unconventional methods to counter U.S. advantages in traditional arenas; (3) catastrophic challenges posed by the acquisition, possession, and possible terrorist or rogue employment of Weapons of Mass Effects; and (4) disruptive challenges that may come from competitors developing, possessing, and employing breakthrough methods or technologies that negate US advantages.¹⁶

The JOE further lists some key assumptions that help explain the factors that will affect the global security environment of the future. These include: (1) the US will sustain its global engagement and continue to be a major power; (2) the ability to apply military force worldwide will remain a vital instrument of United States national power and policy; (3) the pace of the global technological revolution will accelerate; (4) the world's population will increase with significant growth in economically poor countries; (5) the information domain will affect future warfare just as decisively as the industrial age altered the conduct of war more than one hundred years ago; (6) while nation states will remain principal actors, non-nation state and transnational actors will increasingly influence world politics and economics; and (7) friends, foes, and neutrals will have instant access to commercial high-quality data, information, and knowledge.¹⁷

Finally, the JOE lists a summary of conditions and circumstances that will likely shape the global security environment of the future. In the 2030-plus timeframe, armed conflict will likely remain the primary option for those actors who do not feel they can compete, or survive, peacefully with their interests intact. Multiple forces will set the conditions within this future environment, including all aspects of informational, economic, military powers by nation and non-nation state actors. In an increasingly interconnected world, regional crises can quickly expand well beyond the boundaries of the affected region or the immediate cause of the conflict. Continually changing coalitions, partnerships, and new actors will make an already complex environment even more uncertain.

Urban environments and other complex terrain will increasingly become centers of gravity and therefore required areas of operation. The increasing power and influence of non-governmental, regional, private, and international organizations will exert significant pressure and influence on state leadership. As the strategic center of gravity, the American homeland will increasingly be targeted for direct and indirect attack. Strategic attacks oriented towards the political and public will be an essential tool for future adversaries. The importance of rapidly expanding global and regional information architectures, systems, organizations, both private and public, cannot be overstated. The global flow of information creates a fruitful environment for information operations, with the United States potentially losing the technological advantages it currently enjoys. Potential adversaries in this environment will use adaptive responses to counter US conventional military advantages.

When coupled with new and adaptive systems and methods, both established and emerging actors will present a truly significant challenge to US forces. The cumulative effects of these factors suggest that the US will be facing a time of diverse strategic, operational, and tactical challenges.¹⁸ To summarize, the future global security environment would be to say that it will be even more complex, uncertain, interconnected and dangerous than that of today.¹⁹

Internal Factors Driving and Affecting Transformation

The US recognized that its military forces were structured and equipped for the Cold War but were operating in a completely different environment. Technological advances opened doors to new ways of approaching national security. DoD embraced the concepts of Network-Centric Warfare and developed plans for a holistic approach to implementation within the joint, multinational, and interagency spectrum.²⁰ With DoD spending approximately \$60 Billion dollars for Network-Centric capabilities in 2006, the Secretary of Defense (SECDEF) and senior military leaders have shown their consistent support for this effort.²¹

United States governmental direction for transformation processes within the military services begins with the President's NSS, flowing down to the services via the National Defense Strategy and the National Military Strategy. The SECDEF conducts a review on how effective the Department is in achieving the goals of these strategic directives and sets the course for future changes based on changes in the global security environment. This is the basis for the QDR.

Both the 2001 and 2006 QDRs gave visions for the future security environment, calling for the forces to be sized, structured, and equipped to deter aggression in four critical theaters (Europe, northern Asia, the East Asian littoral, and the Middle East/Southwest Asia), defeat

aggression in two theater wars simultaneously, and win decisively in one (the so-called 4-2-1 standard).²² The 2006 QDR added defense of the homeland as a critical piece of the puzzle (changing the standard to 1-4-2-1) and is a reflection of the “Long War” (or the GWOT).²³ Both studies included guidance on transformation and the need for jointness and synchronization of the Services’ transformation efforts. From the QDR and Transformation Planning Guidance the services developed roadmaps for transformation. These roadmaps describe specific vision and guidance for the individual Services’ transformation programs.

2001 Quadrennial Defense Review Guidance for Transformation

The 2001 QDR stated that achieving the objectives of the defense strategy required the transformation of the US Armed Forces, including exploitation of new technologies, new approaches to organizational concepts and capabilities, and new approaches to operational concepts.²⁴ It directed DoD and military Services to develop transformation roadmaps with specific timelines to meet six operational goals: (1) protecting critical bases of operations (US homeland, forces abroad, allies, and friends) and defeating Chemical/Biological/Radiation/Nuclear weapons and their means of delivery; (2) assuring information systems in the face of attack and conducting effective information operations; (3) protecting and sustaining US forces in distant anti-access or area-denial environments and defeating anti-access and area-denial threats; (4) denying enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike, through a combination of complementary air and ground capabilities, against critical mobile and fixed targets at various ranges and in all weather and terrains; (5) enhancing the capability and survivability of space systems and supporting infrastructure; and (6) leveraging information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that includes a tailorable joint operational picture.²⁵

DoD’s approach to transformation rests on the four pillars of strengthening joint operations, experimenting with new approaches to warfare/concepts and capabilities/organizational constructs, exploiting US intelligence advantages, and developing transformational capabilities through increases in science and technology/procurement/process innovations.²⁶ This approach calls for highly networked and joint command and control with improved ability to integrate into combined operations.²⁷ The importance of transformation in a truly joint manner is captured in the QDR, “The effectiveness of these operations will depend upon the ability of DoD to share information and collaborate externally, as well as internally. Interoperability, which enables joint and combined operations, is a key element in all DoD

operational and systems architectures...The better approach is to incorporate interoperability at the outset in designing new systems.”²⁸ Analysis of the 2001 QDR and its transformation guidance showed that senior leaders recognized that the best way to successfully transform the Department and the military Services to meet the changing global security environment of the 21st Century was to ensure a high level of inter-Service cooperation and interoperability throughout each of their processes.

2006 Quadrennial Defense Review Guidance for Transformation

The 2006 QDR built upon the 2001 version and incorporated the experiences of the intervening four years as well as the Base Realignment and Closure study.²⁹ The 2006 QDR called for “implementing enterprise-wide changes to ensure that organizational structures, processes and procedures effectively support its strategic direction.”³⁰ However, the 2006 study went even further than the 2001 report by accelerating the transformation of the Department to focus more on the needs of the Combatant Commanders and developing portfolios of joint capabilities rather than single-service stove-piped programs.³¹

The study also incorporated the US defense community's change in focus from a threat-based focus to an effects-based and capabilities-based outlook. This shift enables Combatant Commanders and national leadership to have joint capabilities portfolios to draw from while improving joint interoperability and reducing program redundancies.³²

The study directed for the Department to reorient capabilities and forces to reflect the desired characteristics needed to meet the challenges of the future global security environment.³³ This reorientation called for a shift from the Cold War model of large, permanent overseas garrisons toward expeditionary operations with a change in focus from conventional conflict to synergistic forces to meet the asymmetric and irregular challenges ahead.³⁴

The 2006 analysis of the need for joint cooperation in the transformation process is “the complex strategic environment of the 21st Century demands greater integration of forces, organizations, and processes, and closer synchronization of forces.”³⁵ A comparison of the 2001 and 2006 studies showed that the US defense community learned many lessons in the period following the September 2001 attacks and the combat operations in the period between the two studies. The synchronization of the Services' transformation efforts and need for joint capabilities was arguably the most important lesson.

US Army-Specific 2006 Quadrennial Defense Review Transformation Guidance

The 2006 QDR gave specific transformation guidance to the different components (i.e. Joint Ground Forces, Special Operations Forces, Joint Air Forces). While the Joint Ground

Forces include US Marine Corps forces, guidance will be discussed from the standpoint of the USA. The vision for Joint ground forces is that “They will be as proficient in irregular operations, including counter-insurgency and stability operations, as they are today in high-intensity combat. They will be modular in structure at all levels, largely self-sustaining, and capable of operating both in traditional formations as well disaggregating into smaller, autonomous units.”³⁶ The vision also includes a larger number of Joint Tactical Air Controllers to achieve a higher level of joint ground-to-air integration.³⁷

At the time the 2006 study was written, the USA had already embarked on organizational transformation of combat and support forces into modular brigade-based units, including brigade combat teams and the support brigades to sustain them.³⁸ This was a major step toward a truly expeditionary ground component. The previously discussed network-centric warfare technology was being incorporated into the USA transformation program, Future Combat Systems (FCS), which tied into the organizational transformation to modular forces.³⁹ The organizational changes are a result of experiences during the GWOT, while the technological changes are made possible by great leaps in informational technology.

US Air Force-Specific 2006 Quadrennial Defense Review Transformation Guidance

The Department’s vision for transformation of joint air capabilities was a reorientation to favor systems and practices that have far greater range and persistence, larger and more flexible payloads for surveillance or strike, and the ability to penetrate and sustain operations in denied areas.⁴⁰ Long-range USAF strike capabilities will be increased by 50 percent, and the penetrating component of long-range strike will be increased by a factor of five by 2025.⁴¹ While the “Joint Air Forces” includes US Navy and Marine Corps, factors primarily affecting the Air Force are discussed.

The USAF will be reorganized to a structure of 86 combat wings, an increase from the present 81 wings, while simultaneously reducing end strength personnel by approximately 40,000 full-time equivalent personnel with balanced cuts across the Total Force.⁴² Targeted cuts in Cold War era weaponry such as Minuteman III intercontinental ballistic missiles and B-52 bombers demonstrate the shift towards the new paradigm will be included.⁴³

The USAF began its transformation into an expeditionary force following the 1991 Gulf War. The Air Expeditionary Force concept evolved over time with great maturation since the September 2001 attacks. The USAF increased its unmanned aerial vehicle operations, increased the number of service personnel available for deployment by over 51,000, and utilized

Joint Tactical Attack Controllers to great effect in the Global War on Terrorism, including directing over 85 percent of air strikes in Afghanistan.⁴⁴

US Army and Air Force Transformation Processes

With the future global security environment defined and the broad direction for Service transformation outlined, the Services develop and implement roadmaps that guide the transformation process. These documents are a combination of broad policies and specific guidance for transformation efforts. Of note is the fact that transformation within one Service will have impacts within the other Services. The interplay between the Army and Air Force transformation processes will be compared. USA transformation efforts have the most significant impact on other services, particularly the USAF. An example would be organizational changes within the Army resulting in the need to re-evaluate airlift plans, close air support requirements, Joint Tactical Air Controller manning, and possibly roles and missions.

A critical factor that affects both the Army and Air Force transformation plans was the 2005 Base Realignment and Closure Commission guidance which closed and realigned much of the military's forward-based force structure, saving approximately five Billion dollars annually and freeing up those forces for transformation.⁴⁵

US Army Transformation Process

Beginning in the late 1980s and early 1990s the Army saw the need to transform from an "Industrial Age" army to an "Information Age" army.⁴⁶ Army experiences in Somalia and the Balkans showed how difficult it was to provide rapid, responsive, and decisive combat power to the Combatant Commanders.⁴⁷ The development of the "Stryker" vehicle led to the formation and testing of "Stryker Brigade Combat Teams," which were the leading edge of what ultimately became the Army's biggest transformation since World War II.⁴⁸

The Army Transformation Roadmap is the document that takes the SECDEF's guidance and gives the roadmap for the Army. The Roadmap defines the importance of transforming to a force with joint and expeditionary capabilities while sustaining the GWOT.⁴⁹ The Army transformation's three components are: transformed culture, transformed processes, and transformed capabilities.⁵⁰ The Army roadmap acknowledges that operational concepts and capabilities must be developed "joint" from the outset.⁵¹ Army transformation includes technical transformation, organizational transformation, and supporting business practices transformation.⁵²

The Army's technical transformation is centered on the technologically-based Future Combat Systems (FCS) program. FCS is comprised of 18 manned and unmanned platforms

centered around the Soldier and integrated into a battle command network.⁵³ Beginning with the Stryker vehicle, the Army's technological transformation aims to bring the force into the information age. Programs focus on the Soldier, FCS, force protection, unmanned systems and mobile wireless network communications with such high-tech capabilities as networked battle command and control systems, networked lethality through standoff precision guided munitions, and anti-improvised explosive device systems.⁵⁴

The key component to this program is the Network-Centric Warfare which will link Soldiers and organizations at all levels to enhance situational awareness and speed up decision cycles. Called "LandWarNet," the Army's planned network architecture processes, stores, and distributes information across the "Global Information Grid" with internal and external interoperability and integration.⁵⁵ The Army's "Good Enough" capabilities include friendly locations, current enemy situations, and joint and coalition interoperability.⁵⁶ The Transformation Roadmap does not appear to give specific direction to tie Army networked systems into those already being used by the Air Force, Navy, and Marines.

Army organizational transformation takes the Service from its Cold War structure to an expeditionary one. This effort includes reorganizing to the "Brigade-Based Modular Force" called Brigade Combat Teams (BCT), which creates standing combined arms brigades that contain the capabilities to deploy to a crisis, as well as support brigades to provide all supporting services.⁵⁷ In addition to creating BCTs, the Army is rebalancing its force to move more personnel into critical career fields and keeping Soldiers with their units for longer tours to provide stability.⁵⁸ Perhaps as significant as the creation of the modular brigade-based force is the transition to the Army Force Generation model that establishes a plan for scheduled deployment periods on an Army-wide basis.⁵⁹ This will transition the Army to an expeditionary force, very similar to the USAF model, which will give predictability and stability to Soldiers and their families.

Army business practice transformation is designed to streamline or eliminate redundant operations to free financial and human resources for the newly structured Army.⁶⁰ Adopting a business sector practice called "Lean Six Sigma," the Army will work to improve efficiency while reducing cost which will help pay for the implementation of the FCS system.⁶¹ Transformation should also speed up the acquisition of FCS systems that are critical pieces of the new Army.

The Roadmap calls for an interdependence on joint fires to reduce reliance on organic fires, with even the smallest combat formations having the ability to leverage joint fires.⁶² The Roadmap recognizes that there are gaps in the Army's tactics, techniques and procedures for utilizing joint fires, as well as a limited number of joint tactical air control parties at lower

echelons.⁶³ There does not appear to be any coordination with the USAF to specifically deal with these gaps. Because the USAF and the Joint Air Forces are tasked with executing the Air Tasking Order based upon the combatant commander's priorities in the execution of operations plans, there is a significant risk to Army Soldiers that air units will not be available to provide those joint fires when necessary. Given the manning situation within the USAF (drawing down 40,000 personnel by Fiscal Year 2008) it will be difficult to cover the requirement for trained Joint Tactical Air Controllers. This, combined with the Army's reassigning 10 Division Artillery Battalions residing in the Army National Guard to other missions may leave a gap in joint fires availability and increasing the level of risk to US forces.⁶⁴

Army aviation will be recapitalized and restructured, including moving Apache helicopter units from Corps to Brigade level and increasing intra-theater cargo capacity and capability.⁶⁵ Apache helicopter units will change mission focus from deep strike to close combat attack, putting a greater reliance on Air Force and air component assets to address the deep strike requirements.⁶⁶ These changes may induce risk to US forces in future conflicts if USAF and Joint Air Forces assets are otherwise tasked and unable to conduct deep strike.

The Army Roadmap outlines its process for measuring transformation effectiveness by implementing the Strategic Readiness System which combines the current Army readiness system with an analysis system focused on future capabilities.⁶⁷ The new system utilizes both lagging and leading indicators for the comprehensive assessment and prediction of the Army's ability to achieve its long-term strategy and transformation goals.⁶⁸

US Air Force Transformation Process

The Air Force transformation plan differs significantly from the Army. First, the USAF is already organized and structured in an expeditionary manner, so major organizational changes are not required. Second, the USAF plan specifically states that it is neither possible, necessary, nor desirable to transform the entire force at once.⁶⁹ Finally, the USAF has been transforming throughout its history and is therefore better postured for the future global security challenges.⁷⁰

The Air Force vision for transformation is to develop and field capabilities necessary to sustain its core competencies in the face of the changing future security environment.⁷¹ The USAF transformation plan addresses the 17 transformational capabilities that cannot be achieved today or must be improved.⁷² These capabilities are grouped in the USAF's six core competencies: information superiority, air and space superiority, precision engagement, global attack, rapid global mobility, and agile combat support.⁷³ The USAF strategy for transformation

to meet requirements is to: (1) work with other services, Joint Staff, and other DoD agencies to enhance joint warfighting; (2) continue to aggressively pursue innovation to lay the foundation for transformation; (3) shift from threat and platform-centric planning to effects and capabilities-based planning and programming; (4) create flexible and agile organizations to facilitate transformation; (5) develop “transformational capabilities” to enable the goals of the QDR; and (6) break out of industrial age business processes and embrace information age thinking.⁷⁴

USAF business transformation will move the Service from the industrial age construct to the more agile and flexible construct needed to deal with the future security environment. The Secretary and Chief of Staff of the Air Force guided the Service to business transformation with the program called “Air Force Smart Operations for the 21st Century” or “AFSO 21.”⁷⁵ AFSO 21 is very similar in design and purpose to the Army’s Lean Six Sigma business transformation efforts. The ultimate transformation goals are a 10 percent shift in business resources to combat operations and modern systems, a compression of average process cycle time by a factor of four, and a 20 percent increase in speed of getting people and equipment to combatant commanders.⁷⁶

A major feature of the USAF transformation strategy is that it is designed to actively work with the other Services to increase interoperability and joint warfighting capability. This push for inter-Service integration is significant because it clearly signals that all transformation efforts will be done with “jointness” in mind.

Comparison and Analysis of USA/USAF Transformation Processes

Army transformation is a process with significantly greater scope and effect than the Air Force. The Army is transforming from an organizational standpoint, a technological standpoint, a business practices standpoint, and from a cultural standpoint.

Army transformation will result in a service that in many ways is similar to the USAF, particularly with the organizational changes the Army’s transformation plan is making. The change to the Army Force Generation model that will put units on pre-planned training and deployment cycles will give Soldiers the predictability that Airmen currently enjoy. This single change will make training, unit replenishment, and deployment cycles much easier to plan for with a resulting increase in predictability and stability for Army personnel. The strategic implications of these improvements is that Combatant Commanders will have a more predictable force generation and availability cycles for Operations Plans, and those apportioned forces will be better prepared to execute contingency operations if required.

An outcome of Army organizational transformation is increased manning requirements for USAF personnel assigned to Army units as air strike controllers. Within the USAF there is a great demand for pilots and flight crews to fill positions other than primary aviation duties. Staff position requirements, foreign exchange position requirements, Undergraduate Pilot/Navigator Training instructor pilot requirements, and major weapons systems instructor pilot requirements all have to be filled. As the USAF decreases in size and restructures itself to fulfill BRAC requirements, the available pool of qualified aviators becomes a scarce commodity. The increased demand for USAF personnel assigned to Army units, combined with a decreasing number of available personnel to fill them, may result in some Army units training and deploying without qualified personnel filling critical air strike control positions. This potential lack of assigned USAF personnel leaves Army units at risk of not being able to utilize air assets at a time when they are most needed.

A final organizational issue is the restructuring and re-rolling of artillery and air units. Both of these changes will require some amount of Air Force support for ground units as their organic fires are no longer available. The Air Force executes its assigned missions based on prioritization and tasking from the Combatant Commander. These priorities and tasks may be more strategic in nature, depending upon the nature of the conflict and the specific time during that conflict, and Army units may incur some level of risk by not having the level of organic fires required by the situation with little air support available to cover the gap.

The Army technological transformation to a network-centric force is a truly revolutionary change. The ability to have situational awareness on friendly and enemy units in real time among a large number of forces has given the air and sea components a decided advantage for over a decade. Network technology has been the enabler that the air and sea components have used to give Combatant Commanders unrivaled information and decision making superiority. The Army's decision to embrace this new style warfare is likely to give American forces an order of magnitude increase in advantages over any competitor. This is a significant strategic advantage.

However, all the advantages of joint interoperable system may not be enjoyed if the network of the Army's LandWarNet is not fully tied into the air components Joint Tactical Information Data-link. An example of the importance of the systems being interoperable would be the ability for the Air Force and Army to share high fidelity target information in real time, as well as high fidelity friendly location information, during the fast-paced battlefield of the future. As Army units are able to operate more autonomously over greater areas due to the revolutionary advantages that networked employment offers, it is critical that units know exactly

where the supporting air is at all times, and even more critical that supporting air forces know where the Army forces are in order to avoid fratricide or friendly fire incidents.

Although the exact technical specifications of the LandWarNet have not been worked out, ensuring a robust level of interoperability, especially in the command and control realm, is achieved. Ensuring a direct tie-in to the Air Force data-link systems will give an order of magnitude increase in effectiveness of Army networked forces. Air Force and Navy experience has shown repeatedly that failing to have all forces on a single “net” causes confusion and consternation among the participants at all levels.

Army and Air Force business transformation are both very similar and very necessary. The terminology is slightly different, but the overall desired end states are the same. Army and Air Force business transformation processes are strategically important because of additional assets, people, money and equipment, which can be better utilized by the Services and Combatant Commanders.

Finally, the cultural transformations of the Services are different in scope primarily due to the different nature of the service's transformation processes. Both Services are changing to an effects-based mindset so that both moving in generally the same direction. The biggest changes will be within the Army in the transition to the expeditionary culture. While the cultural change to “expeditionary” will likely have little impact on the USAF, there may be system efficiencies that may be gained (or lost) by attempting to align the Army's training and deployment cycles with those of the Air Force. An example is that the Army's reorganization has generated the requirement for 13 ASOG's, but the USAF was only willing to increase the number to 10.⁷⁷ The number 10 is important because that is the number of AEF cycles the USAF operates on and the ASOG's need to be aligned with specific AEFs. These types of disconnects can create situations where the Army is short on Air Force support assets in three of its expeditionary cycles due to the mismatch in organizations and cultures. This will have obvious strategic implications.

Conclusion

The future global security environment will be one of great uncertainty and complexity. United States military forces will be called upon to conduct operations in any number of environments and in any number of force constructs. The ability to operate and succeed in this environment is dependent upon the Services' abilities to work effectively as members of joint and coalition teams. Those successes are enabled by joint interoperable services that ensure

consideration of the full spectrum of joint operations as in transforming to meet the challenges of tomorrow.

The Army and Air Force are working toward that vision of joint forces that provide unrivaled capabilities to the nation's leaders. It is critical that the two Services ensure their transformation processes are synchronized from all aspects in order to meet the requirements from the National Security Strategy of the United States. Organizational, technological, business, and cultural changes in one Service can have major effects on the other Services. Ensuring unity of effort throughout the transformation processes ensures that the Services will be far more effective and have greater combined capabilities for the Combatant Commanders.

Army and Air Force transformation processes are inextricably linked. While both are moving toward greater effectiveness in executing assigned roles and missions, there may be disconnects in the two processes that could have strategic impacts. These can be mitigated by closer coordination and integration in the transformation process. It is vitally important that Army organizational restructuring not leave its combat forces without adequate air support, both from the flying side and the ground support unit side. It is also vitally important that the Army ensure its networks are directly tied into the air and sea components in order to maximize the utility and effectiveness of this breakthrough technology. Finally, it is critical that the Services move towards truly joint cultures that enable unity of effort and thus increase the effectiveness of the American military as a whole.

Endnotes

¹ Richard K. Betts, ed., *Conflict After The Cold War: Arguments on Causes of War and Peace* (New York: Longman, 2002), 1.

² US Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: US Department of Defense, 30 September 2001), iii. Hereafter cited as QDR 2001.

³ *Ibid.*, 2-3.

⁴ *Ibid.*, 3-6.

⁵ *Ibid.*, 3.

⁶ *Ibid.*, 8.

⁷ *Ibid.*

⁸ *Ibid.*, 9.

⁹ US Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: US Department of Defense, 6 February 2006), vii-viii. Hereafter cited as QDR 2006.

¹⁰ The White House, *The National Security Strategy of the United States of America* (Washington, D.C.: The White House, March 2006).

¹¹ *Ibid.*, 1.

¹² United Nations Security Council Press Release, "Security Council Holds Iraq In 'Material Breach' of Disarmament Obligations, Offers Final Chance to Comply, Unanimously Adopting Resolution 1441 (2002)," 11 August 2002; available from <http://www.un.org/News/Press/docs/2002/SC7564.doc.htm>; Internet; accessed 19 February 2007.

¹³ Associated Press, "China More Popular Than U.S. Overseas," 23 June 2005, linked from *MSNBC Home Page*, available from <http://www.msnbc.msn.com/id/832490/>; Internet; accessed 27 November 2006.

¹⁴ QDR 2006, 2.

¹⁵ United States Joint Forces Command, "The Joint Operational Environment: The World Through 2030 and Beyond," September 2006; available from <http://asc.army.mil/docs/insightsonjointoperationstheartandscience.pdf>; Internet; accessed 19 February 2007, 3.

¹⁶ *Ibid.*, 3.

¹⁷ *Ibid.*, 3-4.

¹⁸ *Ibid.*, 4-6.

¹⁹ *Ibid.*

²⁰ Jeffrey L. Groh, "Network-Centric Warfare: Just About Technology?," in *U.S. Army War College Guide to National Security Policy and Strategy*, ed. J. Boone Bartholomees, Jr. (Carlisle Barracks: U.S. Army War College, June 2006).

²¹ *Ibid.*, 379.

²² John T. Correll, "In The Wake of the QDR," *Air Force Magazine* 89 (September 2006): 70.

²³ *Ibid.*, 71.

²⁴ QDR 2001, 29.

²⁵ *Ibid.*, 29-30.

²⁶ *Ibid.*, 32.

²⁷ *Ibid.*

²⁸ *Ibid.*, 46.

²⁹ QDR 2006, 1.

³⁰ Ibid., 2.

³¹ Ibid., 4.

³² Ibid.

³³ Ibid., 41.

³⁴ Ibid.

³⁵ Ibid., 4.

³⁶ Ibid., 42.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid., 45.

⁴¹ Correll, 75.

⁴² QDR 2006, 47.

⁴³ Ibid.

⁴⁴ Ibid., 45.

⁴⁵ Gerry J. Gilmore, "Troop Moves, BRAC Part of DoD's Transformation Agenda, Officials Say," *American Forces Press Service*, 21 June 2006 [newspaper on-line]; available from http://www.defenselink.mil/news/Jun2006/20060621_5475.html; Internet; accessed 9 February 2007.

⁴⁶ ASSOCIATION OF THE UNITED STATES ARMY, "2006 and Beyond: What the U.S. Army is Doing," *Torchbearer National Security Report* (March 2006): 6-7. Hereafter cited as *Torchbearer National Security Report* (March 2006).

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ U.S. Department of the Army, *2004 Army Transformation Roadmap* (Washington, D.C.: U.S. Department of the Army, July 2004), vii. Hereafter cited as *2004 Army Transformation Roadmap*.

⁵⁰ Ibid., viii.

⁵¹ Ibid., 2-1.

⁵² Torchbearer National Security Report (March 2006), 3.

⁵³ 2004 Army Transformation Roadmap, 4-2.

⁵⁴ Torchbearer National Security Report (March 2006), 20-21.

⁵⁵ 2004 Army Transformation Roadmap, 5-17 – 5-18.

⁵⁶ Ibid.

⁵⁷ Torchbearer National Security Report (March 2006), 11.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid., 24.

⁶¹ Ibid.

⁶² 2004 Army Transformation Roadmap, 2-8.

⁶³ Ibid.

⁶⁴ COL (Ret) John Bonin, U.S. Army War College Instructor, interview by author, 11 November 2006.

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ 2004 Army Transformation Roadmap, 5-20 – 5-21.

⁶⁸ Ibid.

⁶⁹ U.S. Department of Air Force, *The USAF Transformation Flight Plan FY 03-07* (Washington, D.C.: U.S. Department of Air Force, 2003), iv. available from http://www.dtic.mil/jointvision/af_trans_flightplan.pdf; Internet; accessed 9 February 2007.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Ibid., vi.

⁷³ Ibid., vii.

⁷⁴ Ibid., iii.

⁷⁵ Lisa Mathews, "AFSO 21: A mindset for achieving process improvements," *Air Force Print News Today*, 21 February 2006 [newspaper on-line]; available from http://www.afmc.af.mil/news/story_print.asp?storyID=123016489; Internet; accessed 6 December 2006.

⁷⁶ U.S. Department of Air Force, *The Edge: Air Force Transformation, 2005* (Washington, D.C.: U.S. Department of Air Force, Future Concepts and Transformation Division, 2005), 17.

⁷⁷ COL (Ret) John Bonin.